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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CHEA, PHILIP J	
ART UNIT	**PAPER NUMBER**
2153	

DATE MAILED: 04/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/918,746	LASCHKEWITSCH ET AL.	
	Examiner	Art Unit	
	Philip J Chea	2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to an Amendment filed February 7, 2005. Claims 1-23 are currently pending. Rejections not set forth below should be considered overcome by the Amendment.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Please note that the Applicant did not respond to this in the previous Office Action. Claim 8 is being rejected because it is unclear the number of lists that are claimed. See line 4, where a single list is mentioned, and line 7, where multiple lists are mentioned. Examiner interprets multiple lists as one for each job.

Claims 9-10 are rejected by virtue of being dependent on a rejected claim.

Claim Rejections - 35 USC § 103

3. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Badovinatz et al. (US 6,026,426), and further in view of Moiin et al. (US 5,999,712).

As per claim 1, Badovinatz et al. disclose a system for managing membership of members in a cluster, as claimed, comprising:

- providing a domain for each member of a group, wherein the domain indicates all members of the cluster with a membership to the group (see column 6, lines 1-10); and
- updating a respective copy of the domain in response to a request (see column 7, lines 20-35).

Although the system disclosed by Badovinatz et al. shows substantial features of the claimed invention (discussed above), it fails to disclose: each group member accessing its respective copy of the domain to determine whether the requestor is indicated in its respective copy.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Badovinatz et al., as evidenced by Moiin et al.

In an analogous art, Moiin et al. disclose a distributed computer system with a system for managing membership of members in a cluster, as claimed, comprising each member of the group accessing its respective copy of the membership list to determine whether the requestor is indicated in its copy of the list (see columns 11 and 12, lines 59-67 and 48-66, where copy of list = own $M_i prop$).

Given the teaching of Moiin et al., a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Badovinatz et al. by requiring each member to look in their respective list to add a member, such as disclosed by Moiin et al., in order to optimize the cluster which reflects the changes created by the added process (see Moiin et al., column 4, lines 23-39).

In considering the updating a respective copy of the domain in response to the request (see above) if a requestor is indicated in respective domains, it would have been obvious to update the lists because a new member has just joined.

As per claim 8, Badovinatz et al. disclose a system of managing membership of jobs in a cluster, as claimed, comprising:

- receiving a request to create a group comprising at least two jobs: creating, on a respective node on which each respective job is running, a list indicating each of the at least two jobs (see column 7, lines 2-16, where two jobs = joining processor [requestor] and group leader),
- updating the respective list in response to a request (see column 7, lines 20-35).

Although the system disclosed by Badovinatz et al. shows substantial features of the claimed invention (discussed above), it fails to disclose: accessing each list of each job of the group to determine whether the requesting member job is included in each list.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Badovinatz et al., as evidenced by Moiin et al.

In an analogous art, Moiin et al. disclose a distributed computer system with a system for managing membership of members in a cluster, as claimed, comprising each member of the group accessing its respective copy of the membership list to determine whether the requestor is indicated in its copy of the list (see columns 11 and 12, lines 59-67 and 48-66, where copy of list = own $M_i prop$).

Given the teaching of Moiin, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Badovinatz et al. by requiring each member to look in their respective list to add a member, such as disclosed by Moiin, in order to optimize the cluster which reflects the changes created by the added process (see Moiin, column 4, lines 23-39).

In considering the updating a respective list in response to a request (see above) if a requestor is indicated as included in respective lists, it would have been obvious to update the lists because a new member has just joined.

As per claim 2, Badovinatz et al. in view of Moiin et al. further disclose the requestor requesting to join the group (see Badovinatz column 7, lines 2-16, requestor = joining processor).

As per claims 3 and 9, although the system disclosed by Badovinatz et al. shows substantial features of the claimed invention (discussed above), it fails to disclose a join request causing an active member currently in the group to access its list to determine whether the inactive member is included.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Badovinatz et al., as evidenced by Moiin et al.

Moiin et al. further disclose a distributed computer system with a system for managing membership of members in a cluster, as claimed, comprising each member of the group accessing its respective copy of the membership list to determine whether the inactive member is included in its copy of the list (see columns 11 and 12, lines 59-67 and 48-66, where copy of list = own $M_i prop$).

Given the teaching of Moiin, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Badovinatz et al. by requiring each member to

look in their respective copy to add a member, such as disclosed by Moiin, in order to optimize the cluster which reflects the changes created by the added process (see Moiin, column 4, lines 23-39).

As per claim 4, Badovinatz et al. in view of Moiin et al. further disclose providing a first interface invoked by a request to add a potential member to the group (see Badovinatz Fig. 12, [1204], where *yes* branch indicates first request of new member), a second interface invoked by a request to join an inactive member (see Badovinatz Fig. 12, where *no* branch indicates a returning member), and a third interface invoked by a request to remove a member from the group (see Badovinatz Fig. 13, [1300],[1306]).

As per claim 5, Badovinatz et al. in view of Moiin et al. further disclose the domain being a unique persistent object in the cluster (see Badovinatz column 6, lines 1-3, where memory is considered persistent storage).

As per claim 6, Badovinatz et al. in view of Moiin et al. further disclose the members being jobs on nodes of the cluster (see Badovinatz Fig. 4, jobs = processes).

As per claim 7, Badovinatz et al. in view of Moiin further disclose members being differentiated by unique names (see Badovinatz Fig. 4, where processes are uniquely identified as process x and process y).

As per claim 10, Badovinatz et al. in view of Moiin et al. further disclose upon receiving a request to leave a group from a requesting member job having membership to the group: updating each list of each job of the group to remove the requesting member job from the list (see Badovinatz column 7, lines 36-49).

As per claim 11, Badovinatz et al. in view of Moiin et al. further disclose upon receiving a request to add a new job to the group: for each current member of the group, updating a respective list to include the new job (see Badovinatz column 7, lines 17-35, where the group leader adds the new job to the list); and

for a new node, replicating the list to the new job (see Badovinatz column 6, lines 1-10, where a copy of the membership list is given to the new processor [job]).

4. As per claims 12 and 19, Badovinatz et al disclose a computer system, comprising a first plurality of nodes, each node comprising:

- a processor configured to execute at least one job (see Fig. 4, processing nodes 1-3, each having at least one process);
- a memory device containing a copy of a first list (see Badovinatz column 6, lines 1-3); wherein each copy of the first list indicates jobs with a membership to a first group (see column Badovinatz 6, lines 1-10, where processor = job);
- and updating a respective copy of the first list to include a requesting job (see column 7, lines 20-35).

Although the system disclosed by Badovinatz et al. shows substantial features of the claimed invention (discussed above), it fails to disclose each job configured to access its respective copy of the first list to determine whether a requesting job of another node may be joined to the first group.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Badovinatz et al., as evidenced by Moiin et al.

Moiin et al. further disclose a distributed computer system with a system for managing membership of members in a cluster, as claimed, comprising each member of the group accessing its respective copy of the membership list to determine whether the requestor is indicated in its copy of the list (see columns 11 and 12, lines 59-67 and 48-66, where copy of list = own $M_i prop$).

Given the teaching of Moiin, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Badovinatz et al. by requiring each member to look in their respective list to add a member, such as disclosed by Moiin, in order to optimize the cluster which reflects the changes created by the added process (see Moiin, column 4, lines 23-39).

In considering the updating a respective list in response to a request (see above) if a requestor is indicated as eligible to join, it would have been obvious to update the lists because a new member has just joined.

As per claims 13 and 23, Badovinatz et al. in view of Moiin et al. further disclose a plurality of interfaces configured for adding jobs to the first group (see Badovinatz Fig. 12, [1204], where *yes* branch

indicates first request of new member), removing jobs from the first group (see Badovinatz Fig. 13, [1300], [1306]), and joining returning member jobs to the first group (see Badovinatz Fig. 12, where *no* branch indicates a returning member).

As per claims 14 and 20, Badovinatz et al. in view of Moiin et al. further disclose each job configured to update its respective copy of the first list to include added members (see Badovinatz column 13, lines 47-53).

As per claims 15 and 21, Badovinatz et al. in view of Moiin et al. further disclose each job configure to update it respective copy of the first list to remove dropped members (see Badovinatz column 14, lines 16-20).

As per claim 16, although the system disclosed by Badovinatz et al. shows substantial features of the claimed invention (discussed above), it fails to disclose the first list containing a reference to a node on which the requesting job is running.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Badovinatz et al., as evidenced by Moiin et al.

Moiin et al. further disclose a distributed computer system with a system for managing membership of members in a cluster, as claimed, comprising each member of the group accessing its respective copy of the membership list to determine whether the requestor is indicated in its copy of the list to add into the cluster (see columns 11 and 12, lines 59-67 and 48-66, where copy of list = own $M_i prop$).

Given the teaching of Moiin, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Badovinatz et al. by requiring each member to look in their respective list to add a member, such as disclosed by Moiin, in order to optimize the cluster which reflects the changes created by the added process (see Moiin, column 4, lines 23-39).

As per claim 17, Badovinatz et al. in view of Moiin et al. further disclose:

- a second plurality of nodes (see Badovinatz Fig. 1, where there are a plurality of nodes containing processors running jobs); and

- a copy of a second list stored on each of the second plurality of nodes and associated with a job executing on the each of the second plurality of nodes; wherein each copy of the second list indicates a membership to a second group (see rejection to claim 12, using a different set of nodes chosen from Fig. 1).

As per claims 18 and 22, Badovinatz et al. in view of Moiin et al. further disclose copies of the first list and the second list are each unique on the system (see Badovinatz column 4, lines 50-65, where it is implied a group can have different members, hence different lists).

Response to Arguments

5. Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

(A) Applicant contends that the Badovinatz et al. in view of Moiin et al. do not teach that each member of the group accesses its respective copy of the domain (or list) to determine whether the requestor is indicated in its respective copy of the domain (or list) and, if so, updates the respective copy of the domain (or list) in response to the request. Furthermore, the approval of the request would still be based on the votes, and each member does not update a respective copy of the domain or respective list based on that member's determination of whether the requestor is indicated in its copy of the domain or its list.

In considering (A), the Examiner respectfully disagrees. Although Moiin may wait for the approval of the request based on votes, it still shows each group accessing its respective list to determine if a requestor is in its list. In considering the part that each member does not update a respective copy of the domain, Badovinatz et al. disclose such an update making it obvious to update the respective list once it's realized a requester may join (see rejection above).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip J Chea whose telephone number is 571-272-3951. The examiner can normally be reached on M-F 7:00-4:30 (1st Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Philip J Chea
Examiner

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